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| 10/805,765      | 03/22/2004  | Michael Platte       | 2924                | 1253             |

7590 12/28/2005  
STRIKER, STRIKER & STENBY  
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Huntington, NY 11743

EXAMINER

ABOAGYE, MICHAEL

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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1725

DATE MAILED: 12/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/805,765

Applicant(s)

PLATTE ET AL.

Examiner

Michael Aboagye

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2005 and 18 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 9-18, 20 and 21 is/are rejected.
- 7) ☐ Claim(s) 7, 8 and 19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10/18/2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 4, 5, 13-17, 20 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Vogt (US Patent no. 6414260).

Vogt discloses a connecting element as claimed. Vogt shows a connecting element for connecting and/or fixing an electrode with an electrode arm of a welding apparatus, comprising a base body; and a sensor selected from the group consisting of a sensor for introducing ultrasound waves into an electrode, a sensor for receiving ultrasound waves, and both (Fig.1 and 2, column 3, line 58 – column 4, line 14).

Referring to claim 4, Vogt shows a sensor arranged on a base body of the connecting element (column 4, lines 1- 29).

Regarding claim 5, Vogt shows a sensor being arranged in the recess of the base body (column 4, lines 1- 25).

Regarding claim 13 and 14, Vogt teaches a development which provides the sensor with a sound influencing medium in a way as to avoid undesirable reflection or damping of the ultrasonic waves (column 3, line 28 – column 4 line 52)

Regarding claim 20, note that the connecting element (6) has a hole in which is mounted the sensor (48) which is in contact with the end side of the electrode. Note also that the sensor is considered as being cylindrical in shape (Fig. 1)

Vogt discloses a holding device for holding electrodes for resistance welding, comprising an electrode arm; and a connecting element which is connected with said electrode arm, said connecting element including a base body, and a sensor selected from the group consisting of a sensor for introducing ultrasound waves into an electrode, a sensor for receiving ultrasound waves, and both (Fig.1; column 3, lines 27-57)

Referring to claim 16, Vogt shows a holding device further comprising a second electrode arm with a second connecting element, formed so that a sensor for introducing ultrasound waves into an electrode is arranged in one of said connecting elements and a sensor for receiving ultrasound waves is arranged in another of said connecting elements (column 3, lines 27 – 57).

Referring to claim 17, Vogt shows a holding device wherein the electrode arm has a diameter, which is greater than a diameter of the electrode, said electrode arm being provided at an end side with an opening for receiving a portion of the electrode (Fig.1; column 5, lines 1- 24).

Referring to claim 21, Vogt shows a holding device, wherein said connecting element has an opening, said sensor being cylinder-shaped and mounted in said opening of said connector element, and also being in contact with an end side of said electrode (Fig.1)

3. Claims 1, 4-6, 9, 15-18, 20 and 21 are rejected under 35 U.S.C. 102(b) or alternatively 35 U.S.C. 102(a) as being anticipated by applicant admitted prior art (AAPA).

AAPA shows a connecting element for connecting and/or fixing an electrode with an electrode arm of a welding apparatus, comprising a base body; and a sensor selected from the group consisting of a sensor for introducing ultrasound waves into an electrode, a sensor for receiving ultrasound waves or both.

Regarding claims 4- 6 and 9; note that AAPA shows a connecting element With a sensor arranged on the base body, said sensor is arranged in a recess of said base body, the connecting element is formed as a clamping element, which is connectable with an electrode arm so that it fixes the electrode in a clamping seat, the connecting element is composed of a material which has same or substantially similar acoustic properties as a material of the electrode (specification, page 19 – 22, and Fig.1- 4).

AAPA shows a holding device for holding electrodes for resistance welding, comprising an electrode arm; and a connecting element which is connected with said electrode arm, said connecting element including a base body, and a sensor selected from the group consisting of a sensor for introducing ultrasound waves into an electrode, a sensor for receiving ultrasound waves, and both.

Regarding claims 15 – 18, 20 and 21, AAPA shows a holding further comprising a second electrode arm with a second connecting element, formed so that a sensor for

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introducing ultrasound waves into an electrode is arranged in one of said connecting elements and a sensor for receiving ultrasound waves is arranged in another of said connecting elements, wherein said electrode arm has a diameter which is greater than a diameter of the electrode, said electrode arm being provided at an end side with an opening for receiving a portion of the electrode, said connecting element is connectable for clamping of the electrode by screw means, wherein said connecting element has an opening, said sensor being cylinder-shaped and mounted in said opening of said connecting element, and also being in contact with an end side of said electrode (specification, page 19 – 22, and Fig.1- 4).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2, 3, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Vogt or applicant admitted prior art (AAPA) in view of Waschkies (US Patent no. 5920014).

Vogt or applicant admitted prior art (AAPA) discloses all the elements of claim 1. Vogt and AAPA individually teach a sensor for introducing and/ or receiving of

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ultrasound waves into an electrode but not specifically that the wave group consists of transverse ultrasound waves, shear waves or torsion waves.

However Waschkie teaches a process for assessing welding joints using sensors wherein said sensor is a sensor for introducing and/or receiving of ultrasound waves selected from the group consisting of transverse ultrasound waves, shear waves and torsion waves, having frequency smaller than 1Mhz. Waschkie further teaches that the ultrasound waves are introduced into the electrode in an orientation selected from the group consisting of an orientation substantially parallel to a longitudinal axis of the electrode and an angle smaller than  $90^{\circ}$  to a longitudinal axis of the electrode. (Column 5, line 61- column 7, line 63).

It would have been obvious to one of ordinary skill in the art at the time invention was made to utilize shear waves and in particular transverse waves or torsion waves in either Vogt or AAPA connecting element in view of Waschkie to achieve good propagation behavior of the sound waves in the electrode for sonic inspection (Waschkies; column 7, lines 24- 49).

6. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over either Vogt or applicant admitted prior art (AAPA) in view of Maev et al. (US Patent no. 6297467).

Vogt and AAPA individually disclose all the elements of claim 1 but do not specifically disclose a sensor, which includes a piezo element.

However Maev et al. teaches a transducer built in an electrode with an ultrasonic probe comprising piezoelectric crystal (Fig.2 and column 3, lines 30- 59).

It would have been obvious to one of ordinary skill in the art at the invention was made to provide either Vogt or AAPA connecting element with a sensor that includes a piezo element to vibration and thereby induce a burst of acoustic energy (Maev et al.; column 3, line 39 – column 4, line 67).

***Allowable Subject Matter***

7. Claims 7, 8 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter:

The improvement in claim 7 comprises a connecting element wherein a clamping element has an inner contour which corresponds to an outer contour of the electrode, and further comprising screw means for connecting the clamping element with a counter plate which is formed as a collar-shaped extension of an electrode arm.

The improvement in claim 19 comprises a holding device wherein a counter plate is formed as a collar-shaped extension of an electrode arm, with which a connecting element is connectable for clamping of the electrode by screw means.



***Response to Arguments***

9. The examiner acknowledges the applicants' amendments received by the USPTO on September 30, 2005 and October 18, 2005. The corrected drawing sheets (figures 1 – 4) are approved with regards to the addition of the legend -prior art-. Claims 1 – 21 remain under consideration in the application.

10. Applicant's arguments filed September 30, 2005 have been fully considered but they are not persuasive.

With regards to the applicants' remarks/arguments set forth on pages 3- 6 of the amendment, the examiner respectfully disagrees with the applicants' characterization of the Vogt and AAPA references as not disclosing a connecting element. Attention is drawn to the fact that the statement "a connecting element for connecting" is a statement of intended use, and since it is not structurally defined it does not limit the scope of the claim 1, as both Vogt and AAPA disclose an element connecting an electrode to an electrode arm. The applicants' statement that ultrasonic sensor is located in "a recess far away from the electrode cap" is not pertinent to claim 1. Furthermore Vogt teaches that the ultrasound transmitter and/or the ultrasound can in principle be disposed at any desired site provided the irradiation of the ultrasonic waves into the channel in the required manner is ensured, wherein the site comprises the electrode holder and /or a component connected therewith and /or the electrode shaft of the welding electrode. (see column 3). As a result, the Vogt reference anticipation of the claims remains valid under USC 102(b) as set forth in paragraph 2,

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similarly AAPA references remains valid under 35 U.S.C. 102(b)/(a) as set forth in paragraph 3.

Vogt and AAPA individually teach a sensor for introducing and/ or receiving an ultrasound waves into an electrode but not specifically the wave type, but Waschkies expressly teaches an transmitter/ receiver ultrasound waves selected from the group consisting of shear waves, torsion waves and transverse waves applied in welding inspection, it is deemed that Waschkies remedies this deficiency of either Vogt or AAPA, and these combinations of references remains valid under 35 U.S.C. 103(a).

### ***Conclusion***

**11. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Aboagye whose telephone number is 571-272-8165. The examiner can normally be reached on Mon - Fri 8:30am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Michael Aboagye  
Assistant Examiner  
Art Unit 1725

12/22/2005

KEVIN KERNS  
PRIMARY EXAMINER

*Kevin Kerns 12/22/05*